AUTHOR INDEX

(D) Denotes Demonstration, (T) Title only, (C) Communication, (PC) Poster Communication

ABU-KISHK R.A., LUSH D.J., NOBLE A.R. & WILLIAMS B.C. Cyclic GMP as a second messenger for renin secretion: evidence from superfused dispersed rat kidney cortex cells. (C) 66*P*

AHMED A., RENNIE M.J. & TAYLOR P.M. Glutamine transport in sarcolemmal vesicles from rat hindlimb muscle. (C) 72*P*

AKAIKE N., KOSTYUK P.G. & OSIPCHUK Y.V. Dihydropyridine-sensitive low-threshold calcium channels in isolated rat hypothalamic neurones. 181

AKAIKE Norio & SADOSHIMA Jun-ichi Caffeine affects four different ionic currents in the bull-frog sympathetic neurone. 221

AL-AMOOD W.S. & LEWIS D.M. Effects of electrical stimulation on degenerating rat skeletal muscle. (C) 49*P*

ALKADHI Karim A. Giant miniature end-plate potentials at the untreated and emetine-treated frog neuromuscular junction. 475

AMASSIAN V.E., CRACCO R.Q., MACCABEE P.J. & MARSH R. Comparing magnetic fields when stimulating human brain with different coils. (C) 7*P*

ANAND Ashima, PAINTAL A.S., RAJ H. & SINGH V.K. A method for estimating changes in pulmonary capillary permeability in animals and man from the responses of J receptors to drugs. (C) 36*P*

APPENTENG K. & MOORE J.A. Possible inhomogeneities in the membrane resistivity of jaw-elevator motoneurones in the anaesthetized rat. (C) 11*P*

ARMSTRONG Ian, HODSON Stuart & WIGHAM Chris Observations on isolated rabbit retinal pigment epithelium. (C) 69*P*

ASHMORE J.F. Effect of salicylate on a rapid charge movement in outer hair cells isolated from the guinea-pig cochlea. (C) 46*P*

BABA Kenji, BARON Carl B. & COBURN Ronald F. Phorbol ester effects on coupling mechanisms during cholinergic contraction of swine tracheal smooth muscle. 23

BABIJ Philip & PERIASAMY Muthu Molecular cloning analysis of myosin heavy chains from rat aortic smooth muscle. (C) 54*P*

BAGUST J., KERKUT G.A. & TYLER A.W. Effects of changes in chloride ion concentration upon the rate of spontaneous dorsal root activity in isolated hamster spinal cord. (PC) 75*P*

BAKKER A.J., HEAD S.I., STEPHENSON D.G. & WILLIAMS D.A. Calcium levels in isolated skeletal muscle fibres from phenotypically normal and dystrophic mice (129/ReJ +/?, dy/dy). (C) 51*P*

BARON Carl B. *see* BABA Kenji, BARON Carl B. & COBURN Ronald F. Phorbol ester effects on coupling mechanisms during cholinergic contraction of swine tracheal smooth muscle. 23

BEECH D.J. & BOLTON T.B. A voltage-dependent outward current with fast kinetics in single smooth muscle cells isolated from rabbit portal vein. 397

BELLUZZI O. & SACCHI O. Calcium currents in the normal adult rat sympathetic neurone. 493

BENJAMIN N., COCKCROFT J.R., COLLIER J.G , DOLLERY C.T., RITTER J.M. & WEBB D.J. Local inhibition of converting enzyme and vascular responses to angiotensin and bradykinin in the human forearm. 543

BENZ E.J. Jr., GILMORE-HEBERT Maureen, HOFFMAN J.F. & RICHARDS D.E. Expression of a ouabain-resistant Na,K-pump of HeLa cells transfected with cDNAs encoding the α_1 and β subunits of the rat brain Na,K-ATPase. (C) 70*P*

BERGER Philip J., HORNE Rosemary S.C. & WALKER Adrian M. Cardio-respiratory responses to cool ambient temperature differ with sleep state in neonatal lambs. 351

BERMAN N.E., GRANT S., SHIPP S.D., WILKES M. & WILSON R.I. Compensation for early strabismus in the lateral suprasylvian (LS) area of the cat visual cortex. (C) 22*P*

BLAXTER T.J., CARLEN P.L. & NIESEN C. Pharmacological and anatomical separation of calcium currents in rat dentate granule neurones *in vitro*. 93

BOLTON T.B. *see* BEECH D.J. & BOLTON T.B. A voltage-dependent outward current with fast kinetics in single smooth muscle cells isolated from rabbit portal vein. 397

Bond G., Dakin T.A. & Rees S. Assessment of reaction time and the menstrual cycle in women. (C) 57*P*

Boniface S.J. & Mills K.R. Short latency inhibition of human spinal motoneurones by magnetic brain stimulation. (C) 8*P*

Brenneman D.E., Eiden L.E. & Foster G.A. Drug-induced changes in the expression of neuropeptides in primary neuronal cultures of mouse spinal cord and dorsal root ganglion. (C) 32*P*

Brent P.J. & Ruddock K.H. Post-receptoral visual signals in man. (C) 23*P*

Bruton J.D. The effects of chloride replacement on hypertonic contractures in isolated rat soleus muscle. (C) 50*P*

Campbell I.T. & Willatt D.J. Ventilatory characteristics of nose and mouth breathing in man. (C) 33*P*

Carlen P.L. *see* Blaxter T.J., Carlen P.L. & Niesen C. Pharmacological and anatomical separation of calcium currents in rat dentate granule neurones *in vitro*. 93

Cervero Fernando & Sann Holger Mechanically evoked responses of afferent fibres innervating the guinea-pig's ureter: an *in vitro* study. 245

Chamberlain S. & Lewis D.M. Contractile characteristics and innervation ratio of rat soleus motor units. 1

Chapman R.A., Jones Anna E. & Rodrigo Glenn C. Damage to the cell membrane during the calcium paradox can be separated from the development of sustained irreversible contraction in isolated guinea-pig ventricular myocytes. (C) 52*P*

Chiocchia Gilles & Motais René Effect of catecholamines on deformability of red cells from trout: relative roles of cyclic AMP and cell volume. 321

Chung J.M., LaMotte R.H., Oh U,, Owens C., Simone D., Sorkin L.S. & Willis W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. (C) 13*P*

Clark A.H. & Garland C.J. Evidence that protein kinase-C is involved in 5-hydroxytryptamine-induced contraction of the rabbit isolated de-endothelialized basilar artery. (C) 55*P*

Clarke K.A. & Steadman P. The effect of a TRH analogue on characteristics of locomotion in the rat. (C) 10*P*

Clarke R.W., Ford T.W., Pettit Jennifer S. & Taylor J.S. Stimuli which evoke naloxone-reversible suppression of a spinal reflex in the rabbit. (C) 20*P*

Coburn Ronald F. *see* Baba Kenji, Baron Carl B. & Coburn Ronald F. Phorbol ester effects on coupling mechanisms during cholinergic contraction of swine tracheal smooth muscle. 23

Cockcroft J.R. *see* Benjamin N., Cockcroft J.R., Collier J.G., Dollery C.T., Ritter J.M. & Webb D.J. Local inhibition of converting enzyme and vascular responses to angiotensin and bradykinin in the human forearm. 543

Colebatch J.G., Day B.L., Marsden C.D., Rothwell J.C. & Thompson P.D. Cortical projections to proximal arm muscles in man. (C) 9*P*

Collier J.G. *see* Benjamin N., Cockcroft J.R., Collier J.G., Dollery C.T., Ritter J.M. & Webb D.J. Local inhibition of converting enzyme and vascular responses to angiotensin and bradykinin in the human forearm. 543

Collingridge G.L. & Davies S.N. Potentiation of a 6-cyano-7-nitroquinoxaline-2,3-dione (CNQX)-insensitive EPSP in rat hippocampus *in vitro*. (C) 28*P*

Connell L.A. & Wallis D.I. The receptor mediating the depolarizing effect of 5-hydroxytryptamine in the isolated spinal cord of the neonate rat. (C) 27*P*

Cooke C.B. The effects of vertical loading on the oxygen intake of children and adults during treadmill running. (C) 43*P*

Cottrell G.A., Lin J.W., Llinás R. & Sugimori M. The molluscan neuropeptide FLRFamide potentiates transmission at the isolated squid giant synapse. (C) 64*P*

Cracco R.Q. *see* Amassian V.E., Cracco R.Q., Maccabee P.J. & Marsh R. Comparing magnetic fields when stimulating human brain with different coils. (C) 7*P*

Dakin S.R.G., Hankins M.W. & Ruddock K.H. Dual electrophysiological action of homocysteic acid on horizontal cells of the isolated retina of the roach. (C) 31*P*

Dakin T.A. *see* Bond G., Dakin T.A. & Rees S. Assessment of reaction time and the menstrual cycle in women. (C) 57*P*

Davies Alison M., Koenig J.S. & Thach B.T. Studies of prolonged apnoea elicited by fluid-sensitive receptors in the upper airway of human infants. (C) 35*P*

Davies S.N. *see* Collingridge G.L. & Davies S.N. Potentiation of a 6-cyano-7-nitroquinoxaline-2,3-dione (CNQX)-insensitive EPSP in rat hippocampus *in vitro*. (C) 28*P*

DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

DAY B.L. *see* COLEBATCH J.G., DAY B.L., MARSDEN C.D., ROTHWELL J.C. & THOMPSON P.D. Cortical projections to proximal arm muscles in man. (C) 9*P*

DEFEO Tia T. & MORGAN Kathleen G. Calcium–force coupling mechanisms during vasodilator-induced relaxation of ferret aorta. 123

DEISZ R.A. & PRINCE D.A. Frequency-dependent depression of inhibition in guinea-pig neocortex *in vitro* by $GABA_B$ receptor feed-back on GABA release. 513

DICAPRIO R.A. Non-spiking local interneurones of the ventilatory system in isolated thoracic ganglia of the shore crab. (C) 62*P*

DICKENSON A.H., HALEY J.E. & SCHACHTER M. Evidence for bradykinin as a peripheral mediator of chemical nociception in the anaesthetized rat. (C) 16*P*

DOLLERY C.T. *see* BENJAMIN N., COCKCROFT J.R., COLLIER J.G., DOLLERY C.T., RITTER J.M. & WEBB D.J. Local inhibition of converting enzyme and vascular responses to angiotensin and bradykinin in the human forearm. 543

DRESSLER D. *see* DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

DUPUIS Gilles, HÉROUX Josée & PAYET Marcel D. Characterization of Ca^{2+} and K^+ currents in the human Jurkat T cell line: effects of phytohaemagglutinin. 135

ECCLES R., JAWAD M.S.M. & MORRIS Sara Objective and subjective measurement of nasal resist nce to airflow in man. (D) 3*P*

ECCLES R., LANCASHIRE Barbara & TOLLEY N.S. The effect of L-menthol on electromyographic activity of the alae nasi muscle in man. (C) 34*P*

EIDEN L.E. *see* BRENNEMAN D.E., EIDEN L.E. & FOSTER G.A. Drug-induced changes in the expression of neuropeptides in primary neuronal cultures of mouse spinal cord and dorsal root ganglion. (C) 32*P*

EMSON Piers C. & ZAIDI Mone Further evidence for the origin of circulating calcitonin gene-related peptide in the rat. 297

EVANS R.H. & LONG S.K. Excitatory amino acid receptors involved in primary afferent depolarization in the rat spinal cord *in vitro*. (C) 29*P*

FORD T.W. *see* CLARKE R.W., FORD T.W., PETTIT Jennifer S. & TAYLOR J.S. Stimuli which evoke naloxone-reversible suppression of a spinal reflex in the rabbit. (C) 20*P*

FOSTER G.A., REES H., ROBERTS M.H.T. & SIZER A.R. Microinjection of tetracaine into the anterior pretectal nucleus blocks the antinociceptive effects of deep mesencephalic stimulation in the anaesthetized rat. (C) 21*P*

FOSTER G.A. *see* BRENNEMAN D.E., EIDEN L.E. & FOSTER G.A. Drug-induced changes in the expression of neuropeptides in primary neuronal cultures of mouse spinal cord and dorsal root ganglion. (C) 32*P*

GARDNER W.N. & MEAH M.S. Response of the upper airway to CO_2 in laryngectomized man. (C) 38*P*

GARLAND C.J. *see* CLARK A.H. & GARLAND C.J. Evidence that protein kinase-C is involved in 5-hydroxytryptamine-induced contraction of the rabbit isolated de-endothelialized basilar artery. (C) 55*P*

GILMORE-HEBERT Maureen *see* BENZ E.J. Jr., GILMORE-HEBERT Maureen, HOFFMAN J.F. & RICHARDS D.E. Expression of a ouabain-resistant Na,K-pump of HeLa cells transfected with cDNAs encoding the α_1 and β subunits of the rat brain Na,K-ATPase. (C) 70*P*

GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

GLADDEN Margaret H., SPIKE Rosemary C. & SUTHERLAND Fiona I. Immaturity of fusimotor innervation at birth in the cat. (C) 12*P*

GODT Robert E. & NOSEK Thomas M. Changes in intracellular milieu with fatigue or hypoxia depress contraction of skinned rabbit skeletal and cardiac muscle. 155

GRANT S. *see* BERMAN N.E., GRANT S., SHIPP S.D., WILKES M. & WILSON R.I. Compensation for early strabismus in the lateral suprasylvian (LS) area of the cat visual cortex. (C) 22*P*

GUTNICK M.J., LUX H.D., SWANDULLA D. & ZUCKER H. Voltage-dependent and calcium-dependent inactivation of calcium channel current in identified snail neurones. 197

HALEY J.E. *see* DICKENSON A.H., HALEY J.E. & SCHACHTER M. Evidence for bradykinin as a peripheral mediator of chemical nociception in the anaesthetized rat. (C) 16*P*

HANKINS M.W. *see* DAKIN S.R.G., HANKINS M.W. & RUDDOCK K.H. Dual electrophysiological action of homocysteic acid on horizontal cells of the isolated retina of the roach. (C) 31*P*

HARRIS L.R. & STELLING J.W. A six-dimensional computer-controlled system for simultaneous vestibular and full-field visual stimulation. (D) 6*P*

HARRIS L.R. & STELLING J.W. Directional responses to otolithic stimulation of type I horizontal canal-related neurones in the vestibular nucleus of the awake cat. (C) 47*P*

HARRIS P.J., SKINNER S.L. & ZHUO J. Haemodynamic and renal tubular responses to low-dose infusion or bolus injection of the peptide ANF in anaesthetized rats. 309

HARRISON N.L. & LAMBERT N.A. The effects of protein kinase activators on $GABA_A$ receptor function in cultured rat hippocampal neurones. (C) 17*P*

HARRISON P.J., JACK J.J.B. & KULLMANN D.M. Monosynaptic EPSPs in cat lumbosacral motoneurones from group Ia afferents and fibres descending in the spinal cord. 43

HEAD S.I. *see* BAKKER A.J., HEAD S.I., STEPHENSON D.G. & WILLIAMS D.A. Calcium levels in isolated skeletal muscle fibres from phenotypically normal and dystrophic mice (129/ReJ +/?, dy/dy). (C) 51*P*

HÉROUX Josée *see* DUPUIS Gilles, HÉROUX Josée & PAYET Marcel D. Characterization of Ca^{2+} and K^+ currents in the human Jurkat T cell line: effects of phytohaemagglutinin. 135

HILTON P.J., POSTON L. & WATSON M.A. Na/H exchange in quiescent human leucocytes. (C) 67*P*

HODSON Stuart & WIGHAM Chris A near-zero membrane potential in transporting corneal endothelial cells of rabbit. 365

HODSON Stuart *see* ARMSTRONG Ian, HODSON Stuart & WIGHAM Chris Observations on isolated rabbit retinal pigment epithelium. (C) 69*P*

HOFFMAN J.F. *see* BENZ E.J. Jr., GILMORE-HEBERT Maureen, HOFFMAN J.F. & RICHARDS D.E. Expression of a ouabain-resistant Na,K-pump of HeLa cells transfected with cDNAs encoding the α_1 and β subunits of the rat brain Na,K-ATPase. (C) 70*P*

HOLDEN-DYE L. & WALKER R.J. The effect of nitrate ions on the GABA response in *Ascaris suum* muscle cells. (C) 30*P*

HORNE Rosemary S.C. *see* BERGER Philip J., HORNE Rosemary S.C. & WALKER Adrian M. Cardio-respiratory responses to cool ambient temperature differ with sleep state in neonatal lambs. 351

HUNDAL H.S. & RENNIE M.J. Comparisons between uptake of glutamine and 6-diazo-5-oxo-L-norleucine (DON) in the isolated perfused rat skeletal muscle. (C) 71*P*

HUSZCZUK A., INNES J.A., SOLARTE I., WASSERMAN K., WHIPP B.J. & YEH E. Baroreceptor contributions to ventilatory control following altered hind-limb perfusion during recovery from electrically induced exercise in anaesthetized dogs. (C) 58*P*

IMMS F.J. & MEHTA D. Concordance of cardiovascular and ventilatory response to static work in man. (C) 37*P*

INNES J.A. *see* HUSZCZUK A., INNES J.A., SOLARTE I., WASSERMAN K., WHIPP B.J. & YEH E. Baroreceptor contributions to ventilatory control following altered hind-limb perfusion during recovery from electrically induced exercise in anaesthetized dogs. (C) 58*P*

JACK J.J.B. *see* HARRISON P.J., JACK J.J.B. & KULLMANN D.M. Monosynaptic EPSPs in cat lumbosacral motoneurones from group Ia afferents and fibres descending in the spinal cord. 43

JAMISON J.P. & SMITH W.B. Opto-coupled isolated stimulator and tranformer-coupled isolated amplifier suitable for microcomputer controlled stimulation and recording from human subjects. (D) 5*P*

JAWAD M.S.M. *see* ECCLES R., JAWAD M.S.M. & MORRIS Sara Objective and subjective measurement of nasal resistance to airflow in man. (D) 3*P*

JONES Anna E. *see* CHAPMAN R.A., JONES Anna E. & RODRIGO Glenn C. Damage to the cell membrane during the calcium paradox can be separated from the development of sustained irreversible contraction in isolated guinea-pig ventricular myocytes. (C) 52*P*

JONES D.A., NEWHAM D.J & TORGAN C. Mechanical influences on long-lasting human muscle fatigue and delayed-onset pain. 415

JONES H.C. & KEEP R.F. Developmental changes in the ultrastructure of rat cerebral capillaries. (C) 15*P*

KEATING M.J. & WITHINGTON-WRAY D.J. The role of visual experience in the development of the map of auditory space in the superior colliculus of the guinea-pig. (C) 45*P*

KEATINGE W.R. & NYBOER J.H. Body temperatue during a 125-minute swim in Bering Straits in water at 7·2–7·4 °C. (C) 42*P*

KEEP R.F. *see* JONES H.C. & KEEP R.F. Developmental changes in the ultrastructure of rat cerebral capillaries. (C) 15*P*

KERKUT G.A. *see* BAGUST J., KERKUT G.A. & TYLER A.W. Effects of changes in chloride ion concentration upon the rate of spontaneous dorsal root activity in isolated hamster spinal cord. (PC) 75*P*

KHAMITOV G. *see* GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

KHAZIPOV R. *see* GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

KING A.E., THOMPSON S.W.N. & WOOLF C.J. Activation of ventral horn neurones by peripheral nerve and skin stimulation in the rat isolated spinal cord–hindlimb preparation. (C) 25*P*

KOENIG J.S. *see* DAVIES Alison M., KOENIG J.S. & THACH B.T. Studies of prolonged apnoea elicited by fluid-sensitive receptors in the upper airway of human infants. (C) 35*P*

KOSTYUK P.G. *see* AKAIKE N., KOSTYUK P.G. & OSIPCHUK Y.V. Dihydropyridine-sensitive low-threshold calcium channels in isolated rat hypothalamic neurones. 181

KULLMANN D.M. *see* HARRISON P.J., JACK J.J.B. & KULLMANN D.M. Monosynaptic EPSPs in cat lumbosacral motoneurones from group Ia afferents and fibres descending in the spinal cord. 43

KULLMANN D.M., MARTIN R.L. & REDMAN S.J. Reduction by general anaesthetics of group Ia excitatory postsynaptic potentials and currents in the cat spinal cord. 277

LAMARRA N. & WARD S.A. Relationship between dead space and tidal volume during muscular exercise in humans. (C) 41*P*

LAMBERT N.A. *see* HARRISON N.L. & LAMBERT N.A. The effects of protein kinase activators on $GABA_A$ receptor function in cultured rat hippocampal neurones. (C) 17*P*

LAMOTTE R.H. *see* CHUNG J.M., LAMOTTE R.H., OH U,, OWENS C., SIMONE D., SORKIN L.S. & WILLIS W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. (C) 13*P*

LANCASHIRE Barbara *see* ECCLES R., LANCASHIRE Barbara & TOLLEY N.S. The effect of L-menthol on electromyographic activity of the alae nasi muscle in man. (C) 34*P*

LANG R.J. Identification of the major membrane currents in freshly dispersed single smooth muscle cells of guinea-pig ureter. 375

LÄNNERGREN J., LARSSON L. & WESTERBLAD H. A novel type of delayed tension reduction observed in rat motor units after intense activity. 267

LARSSON L. *see* LÄNNERGREN J., LARSSON L. & WESTERBLAD H. A novel type of delayed tension reduction observed in rat motor units after intense activity. 267

LEWIN Gary R. & MCMAHON Stephen B. Is the adaptation rate of a mechanosensitive primary afferent dependent on the end-organ it innervates in the anaesthetized rat? (C) 26*P*

LEWIS D.M. *see* CHAMBERLAIN S. & LEWIS D.M. Contractile characteristics and innervation ratio of rat soleus motor units. 1

LEWIS D.M. *see* AL-AMOOD W.S. & LEWIS D.M. Effects of electrical stimulation on degenerating rat skeletal muscle. (C) 49*P*

LIN J.W. *see* COTTRELL G.A., LIN J.W., LLINÁS R. & SUGIMORI M. The molluscan neuropeptide FLRFamide potentiates transmission at the isolated squid giant synapse. (C) 64*P*

LLINÁS R. *see* COTTRELL G.A., LIN J.W., LLINÁS R. & SUGIMORI M. The molluscan neuropeptide FLRFamide potentiates transmission at the isolated squid giant synapse. (C) 64*P*

LOGAN I.G., ORCHARDSON R. & WALLACE K.R. Software for real-time experiments in physiology using BBC B+ microcomputers and Unilab interfaces. (D) 4*P*

LOIRAND G., MIRONNEAU C., MIRONNEAU J. & PACAUD P. Two types of calcium currents in single smooth muscle cells from rat portal vein. 333

LONG S.K. *see* EVANS R.H. & LONG S.K. Excitatory amino acid receptors involved in primary afferent depolarization in the rat spinal cord *in vitro*. (C) 29*P*

LOVICK T.A. Hypotensive action of 5-HT in the ventrolateral medulla of anaesthetized rat. (C) 14*P*

LUMB B.M. Effects of electrical and chemical stimulation of ventromedial forebrain structures on a viscerosomatic reflex in the anaesthetized rat. (C) 24*P*

LUSH D.J. *see* ABU-KISHK R.A., LUSH D.J., NOBLE A.R. & WILLIAMS B.C. Cyclic GMP as a second messenger for renin secretion: evidence from superfused dispersed rat kidney cortex cells. (C) 66*P*

LUX H.D. *see* GUTNICK M.J., LUX H.D., SWANDULLA D. & ZUCKER H. Voltage-dependent and calcium-dependent inactivation of calcium channel current in identified snail neurones. 197

MACCABEE P.J. *see* AMASSIAN V.E., CRACCO R.Q., MACCABEE P.J. & MARSH R. Comparing magnetic fields when stimulating human brain with different coils. (C) 7*P*

MCCONNELL A.K. & SEMPLE E.S.G. Ventilatory sensitivity to CO_2 at rest and during exercise in endurance-trained and non-endurance-trained humans. (C) 39*P*

MCKIRDY H.C., MARSHALL R.W. & TAYLOR B.A. *In vitro* studies on the innervation of human gall-bladder muscle. (C) 56*P*

MCMAHON Stephen B. *see* LEWIN Gary R. & MCMAHON Stephen B. Is the adaptation rate of a mechanosensitive primary afferent dependent on the end-organ it innervates in the anaesthetized rat? (C) 26*P*

MAERTENS DE NOORDHOUT A. *see* DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

MAGAZANIK L.G. *see* GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

MARSDEN C.D. *see* DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

MARSDEN C.D. *see* COLEBATCH J.G., DAY B.L., MARSDEN C.D., ROTHWELL J.C. & THOMPSON P.D. Cortical projections to proximal arm muscles in man. (C) 9*P*

MARSH R. *see* AMASSIAN V.E., CRACCO R.Q., MACCABEE P.J. & MARSH R. Comparing magnetic fields when stimulating human brain with different coils. (C) 7*P*

MARSHALL Janice M. & METCALFE J.D. Analysis of factors that contribute to cardiovascular changes induced in the cat by graded levels of systemic hypoxia. 429

MARSHALL R.W. *see* MCKIRDY H.C., MARSHALL R.W. & TAYLOR B.A. *In vitro* studies on the innervation of human gall-bladder muscle. (C) 56*P*

MARTIN R.L. *see* KULLMANN D.M., MARTIN R.L. & REDMAN S.J. Reduction by general anaesthetics of group Ia excitatory postsynaptic potentials and currents in the cat spinal cord. 277

MEAH M.S. *see* GARDNER W.N. & MEAH M.S. Response of the upper airway to CO_2 in laryngectomized man. (C) 38*P*

MEHTA D. *see* IMMS F.J. & MEHTA D. Concordance of cardiovascular and ventilatory response to static work in man. (C) 37*P*

METCALFE J.D. *see* MARSHALL Janice M. & METCALFE J.D. Analysis of factors that contribute to cardiovascular changes induced in the cat by graded levels of systemic hypoxia. 429

MILLS K.R. *see* BONIFACE S.J. & MILLS K.R. Short latency inhibition of human spinal motoneurones by magnetic brain stimulation. (C) 8*P*

MIRONNEAU C. *see* LOIRAND G., MIRONNEAU C., MIRONNEAU J. & PACAUD P. Two types of calcium currents in single smooth muscle cells from rat portal vein. 333

MIRONNEAU J. *see* LOIRAND G., MIRONNEAU C., MIRONNEAU J. & PACAUD P. Two types of calcium currents in single smooth muscle cells from rat portal vein. 333

MOORE J.A. *see* APPENTENG K. & MOORE J.A. Possible inhomogeneities in the membrane resistivity of jaw-elevator motoneurones in the anaesthetized rat. (C) 11*P*

MORGAN Kathleen G. *see* DEFEO Tia T. & MORGAN Kathleen G. Calcium–force coupling mechanisms during vasodilator-induced relaxation of ferret aorta. 123

MORRIS Sara *see* ECCLES R., JAWAD M.S.M. & MORRIS Sara Objective and subjective measurement of nasal resistance to airflow in man. (D) 3*P*

MOTAIS René *see* CHIOCCHIA Gilles & MOTAIS René Effect of catecholamines on deformability of red cells from trout: relative roles of cyclic AMP and cell volume. 321

MOULINS M. & SIMMERS J. Changes in the oscillatory properties of neurones in isolated lobster ganglia after long-term decentralization. (C) 60*P*

NAKASHIMA K. *see* DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

NEAL R.I. & TAYLOR J.A. High intensity peripheral nerve stimulation evokes adrenergic and opioidergic suppression of a spinal reflex in the decerebrated rabbit. (C) 18*P*

NELSON Mark T. & WORLEY Jennings F. Dihydropyridine inhibition of single calcium channels and contraction in rabbit mesenteric artery depends on voltage. 65

NEWHAM D.J. *see* JONES D.A., NEWHAM D.J. & TORGAN C. Mechanical influences on long-lasting human muscle fatigue and delayed-onset pain. 415

NIESEN C. *see* BLAXTER T.J., CARLEN P.L. & NIESEN C. Pharmacological and anatomical separation of calcium currents in rat dentate granule neurones *in vitro*. 93

NIKOLSKY E.E. *see* GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

NOBLE A.R. *see* ABU-KISHK R.A., LUSH D.J., NOBLE A.R. & WILLIAMS B.C. Cyclic GMP as a second messenger for renin secretion: evidence from superfused dispersed rat kidney cortex cells. (C) 66*P*

NOSEK Thomas M. *see* GODT Robert E. & NOSEK Thomas M. Changes in intracellular milieu with fatigue or hypoxia depress contraction of skinned rabbit skeletal and cardiac muscle. 155

NYBOER J.H. *see* KEATINGE W.R. & NYBOER J.H. Body temperatue during a 125-minute swim in Bering Straits in water at 7·2–7·4 °C. (C) 42*P*

OH U. *see* CHUNG J.M., LAMOTTE R.H., OH U,, OWENS C., SIMONE D., SORKIN L.S. & WILLIS W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. (C) 13*P*

ORCHARDSON R. *see* LOGAN I.G., ORCHARDSON R. & WALLACE K.R. Software for real-time experiments in physiology using BBC B+ microcomputers and Unilab interfaces. (D) 4*P*

OSIPCHUK Y.V. *see* AKAIKE N., KOSTYUK P.G. & OSIPCHUK Y.V. Dihydropyridine-sensitive low-threshold calcium channels in isolated rat hypothalamic neurones. 181

OWENS C. *see* CHUNG J.M., LAMOTTE R.H., OH U,, OWENS C., SIMONE D., SORKIN L.S. & WILLIS W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. (C) 13*P*

PACAUD P. *see* LOIRAND G., MIRONNEAU C., MIRONNEAU J. & PACAUD P. Two types of calcium currents in single smooth muscle cells from rat portal vein. 333

PAINTAL A.S. *see* ANAND Ashima, PAINTAL A.S., RAJ H. & SINGH V.K. A method for estimating changes in pulmonary capillary permeability in animals and man from the responses of J receptors to drugs. (C) 36*P*

PAYET Marcel D. *see* DUPUIS Gilles, HÉROUX Josée & PAYET Marcel D. Characterization of Ca^{2+} and K^+ currents in the human Jurkat T cell line: effects of phytohaemagglutinin. 135

PERIASAMY Muthu *see* BABIJ Philip & PERIASAMY Muthu Molecular cloning analysis of myosin heavy chains from rat aortic smooth muscle. (C) 54*P*

PETTIT Jennifer S. *see* CLARKE R.W., FORD T.W., PETTIT Jennifer S. & TAYLOR J.S. Stimuli which evoke naloxone-reversible suppression of a spinal reflex in the rabbit. (C) 20*P*

POCOCK G. & RICHARDS C.D. Hydrogen ion regulation in rat cerebellar granule cells maintained in tissue culture. (C) 68*P*

POSTON L. *see* HILTON P.J., POSTON L. & WATSON M.A. Na/H exchange in quiescent human leucocytes. (C) 67*P*

PRINCE D.A. *see* DEISZ R.A. & PRINCE D.A. Frequency-dependent depression of inhibition in guinea-pig neocortex *in vitro* by $GABA_B$ receptor feed-back on GABA release. 513

RAJ H. *see* ANAND Ashima, PAINTAL A.S., RAJ H. & SINGH V.K. A method for estimating changes in pulmonary capillary permeability in animals and man from the responses of J receptors to drugs. (C) 36*P*

RANATUNGA K.W. & THOMAS P.E. Contraction characteristics of peroneus longus muscle in the anaesthetized rat. (C) 48*P*

RAND Victoria & WILLIAMS R.G. Neurones in the brain stem of the grey short-tailed opossum *Monodelphis domestica* revealed by antibodies to tyrosine hydroxylase. (PC) 77*P*

RANDALL D.J. & TAYLOR E.W. Circulating catecholamines and the control of ventilation in the decerebrate dogfish. (C) 63*P*

REDMAN S.J. *see* KULLMANN D.M., MARTIN R.L. & REDMAN S.J. Reduction by general anaesthetics of group Ia excitatory postsynaptic potentials and currents in the cat spinal cord. 277

REES H. & ROBERTS M.H.T. Dorsal column inhibition of multireceptive dorsal horn neurones in the anaesthetized rat. (C) 19*P*

REES H. *see* FOSTER G.A., REES H., ROBERTS M.H.T. & SIZER A.R. Microinjection of tetracaine into the anterior pretectal nucleus blocks the antinociceptive effects of deep mesencephalic stimulation in the anaesthetized rat. (C) 21*P*

REES S. *see* BOND G., DAKIN T.A. & REES S. Assessment of reaction time and the menstrual cycle in women. (C) 57*P*

RENNIE M.J. *see* HUNDAL H.S. & RENNIE M.J. Comparisons between uptake of glutamine and 6-diazo-5-oxo-L-norleucine (DON) in the isolated perfused rat skeletal muscle. (C) 71*P*

RENNIE M.J. *see* AHMED A., RENNIE M.J. & TAYLOR P.M. Glutamine transport in sarcolemmal vesicles from rat hindlimb muscle. (C) 72*P*

RICHARDS C.D. *see* POCOCK G. & RICHARDS C.D. Hydrogen ion regulation in rat cerebellar granule cells maintained in tissue culture. (C) 68*P*

RICHARDS D.E. *see* BENZ E.J. Jr., GILMORE-HEBERT Maureen, HOFFMAN J.F. & RICHARDS D.E. Expression of a ouabain-resistant Na,K-pump of HeLa cells transfected with cDNAs encoding the α_1 and β subunits of the rat brain Na,K-ATPase. (C) 70*P*

RITTER J.M. *see* BENJAMIN N., COCKCROFT J.R., COLLIER J.G., DOLLERY C.T., RITTER J.M. & WEBB D.J. Local inhibition of converting enzyme and vascular responses to angiotensin and bradykinin in the human forearm. 543

ROBERTS M.H.T. *see* REES H. & ROBERTS M.H.T. Dorsal column inhibition of multireceptive dorsal horn neurones in the anaesthetized rat. (C) 19*P*

ROBERTS M.H.T. *see* FOSTER G.A., REES H., ROBERTS M.H.T. & SIZER A.R. Microinjection of tetracaine into the anterior pretectal nucleus blocks the antinociceptive effects of deep mesencephalic stimulation in the anaesthetized rat. (C) 21*P*

RODRIGO Glenn C. *see* CHAPMAN R.A., JONES Anna E. & RODRIGO Glenn C. Damage to the cell membrane during the calcium paradox can be separated from the development of sustained irreversible contraction in isolated guinea-pig ventricular myocytes. (C) 52*P*

RODRIGO Glenn C. & SULEIMAN M.S. The effects of harmaline on the membrane currents of single guinea-pig ventricular myocytes. (C) 53*P*

RONACHER B. & WOLF H. Lesion experiments indicate a hemisegmental organization of the locus flight oscillator. (C) 59*P*

ROTHWELL J.C. *see* DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

ROTHWELL J.C. *see* COLEBATCH J.G., DAY B.L., MARSDEN C.D., ROTHWELL J.C. & THOMPSON P.D. Cortical projections to proximal arm muscles in man. (C) 9*P*

RUDDOCK K.H. *see* BRENT P.J. & RUDDOCK K.H. Post-receptoral visual signals in man. (C) 23*P*

RUDDOCK K.H. *see* DAKIN S.R.G., HANKINS M.W. & RUDDOCK K.H. Dual electrophysiological action of homocysteic acid on horizontal cells of the isolated retina of the roach. (C) 31*P*

SACCHI O. *see* BELLUZZI O. & SACCHI O. Calcium currents in the normal adult rat sympathetic neurone. 493

SADOSHIMA Jun-ichi *see* AKAIKE Norio & SADOSHIMA Jun-ichi Caffeine affects four different ionic currents in the bull-frog sympathetic neurone. 221

SANN Holger *see* CERVERO Fernando & SANN Holger Mechanically evoked responses of afferent fibres innervating the guinea-pig's ureter: an *in vitro* study. 245

SCHAAFSMA A. Changes in excitability demonstrated by electrical stimulation of the motor cortex in man. (D) 2*P*

SCHACHTER M. *see* DICKENSON A.H., HALEY J.E. & SCHACHTER M. Evidence for bradykinin as a peripheral mediator of chemical nociception in the anaesthetized rat. (C) 16*P*

SEMPLE E.S.G. *see* MCCONNELL A.K. & SEMPLE E.S.G. Ventilatory sensitivity to CO_2 at rest and during exercise in endurance-trained and non-endurance-trained humans. (C) 39*P*

SHIPP S.D. *see* BERMAN N.E., GRANT S., SHIPP S.D., WILKES M. & WILSON R.I. Compensation for early strabismus in the lateral suprasylvian (LS) area of the cat visual cortex. (C) 22*P*

SILLAR Keith T. & SOFFE Stephen R. Locomotion based on rhythmic motor bursts in *Rana temporaria* embryos. (PC) 76*P*

SIMMERS J. *see* MOULINS M. & SIMMERS J. Changes in the oscillatory properties of neurones in isolated lobster ganglia after long-term decentralization. (C) 60*P*

SIMONE D. *see* CHUNG J.M., LAMOTTE R.H., OH U., OWENS C., SIMONE D., SORKIN L.S. & WILLIS W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. (C) 13*P*

SINGH V.K. *see* ANAND Ashima, PAINTAL A.S., RAJ H. & SINGH V.K. A method for estimating changes in pulmonary capillary permeability in animals and man from the responses of J receptors to drugs. (C) 36*P*

SIZER A.R. *see* FOSTER G.A., REES H., ROBERTS M.H.T. & SIZER A.R. Microinjection of tetracaine into the anterior pretectal nucleus blocks the antinociceptive effects of deep mesencephalic stimulation in the anaesthetized rat. (C) 21*P*

SKINNER S.L. *see* HARRIS P.J., SKINNER S.L. & ZHUO J. Haemodynamic and renal tubular responses to low-dose infusion or bolus injection of the peptide ANF in anaesthetized rats. 309

SMITH W.B. *see* JAMISON J.P. & SMITH W.B. Opto-coupled isolated stimulator and tranformer-coupled isolated amplifier suitable for microcomputer controlled stimulation and recording from human subjects. (D) 5*P*

SNETKOV V.A. *see* GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

SOFFE S.R. A single sensory pathway can activate two motor patterns in *Xenopus* embryos. (C) 65*P*

SOFFE Stephen R. *see* SILLAR Keith T. & SOFFE Stephen R. Locomotion based on rhythmic motor bursts in *Rana temporaria* embryos. (PC) 76*P*

SOLARTE I. *see* HUSZCZUK A., INNES J.A., SOLARTE I., WASSERMAN K., WHIPP B.J. & YEH E. Baroreceptor contributions to ventilatory control following altered hind-limb perfusion during recovery from electrically induced exercise in anaesthetized dogs. (C) 58*P*

SORKIN L.S. *see* CHUNG J.M., LAMOTTE R.H., OH U., OWENS C., SIMONE D., SORKIN L.S. & WILLIS W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. (C) 13*P*

SPIKE Rosemary C. *see* GLADDEN Margaret H., SPIKE Rosemary C. & SUTHERLAND Fiona I. Immaturity of fusimotor innervation at birth in the cat. (C) 12*P*

STEADMAN P. *see* CLARKE K.A. & STEADMAN P. The effect of a TRH analogue on characteristics of locomotion in the rat. (C) 10*P*

STELLING J.W. *see* HARRIS L.R. & STELLING J.W. A six-dimensional computer-controlled system for simultaneous vestibular and full-field visual stimulation. (D) 6*P*

STELLING J.W. *see* HARRIS L.R. & STELLING J.W. Directional responses to otolithic stimulation of type I horizontal canal-related neurones in the vestibular nucleus of the awake cat. (C) 47*P*

STEPHENSON D.G. *see* BAKKER A.J., HEAD S.I., STEPHENSON D.G. & WILLIAMS D.A. Calcium levels in isolated skeletal muscle fibres from phenotypically normal and dystrophic mice (129/ReJ +/?, dy/dy). (C) 51*P*

SUGIMORI M. *see* COTTRELL G.A., LIN J.W., LLINÁS R. & SUGIMORI M. The molluscan neuropeptide FLRFamide potentiates transmission at the isolated squid giant synapse. (C) 64*P*

SULEIMAN M.S. *see* RODRIGO Glenn C. & SULEIMAN M.S. The effects of harmaline on the membrane currents of single guinea-pig ventricular myocytes. (C) 53*P*

SUTHERLAND Fiona I. *see* GLADDEN Margaret H., SPIKE Rosemary C. & SUTHERLAND Fiona I. Immaturity of fusimotor innervation at birth in the cat. (C) 12*P*

SWANDULLA D. *see* GUTNICK M.J., LUX H.D., SWANDULLA D. & ZUCKER H. Voltage-dependent and calcium-dependent inactivation of calcium channel current in identified snail neurones. 197

SYED N.I. & WINLOW W. Evidence for a multiganglionic neuronal substrate underlying several behaviours in *Lymnaea stagnalis* (L.). (C) 61*P*

TATTERSALL J.E.H. Ecothiopate, an organophosphorus anticholinesterase, blocks open nicotinic ion channels in dissociated adult mouse muscle fibres. (PC) 73*P*

TAYLOR B.A. *see* MCKIRDY H.C., MARSHALL R.W. & TAYLOR B.A. *In vitro* studies on the innervation of human gall-bladder muscle. (C) 56*P*

TAYLOR E.W. *see* RANDALL D.J. & TAYLOR E.W. Circulating catecholamines and the control of ventilation in the decerebrate dogfish. (C) 63*P*

TAYLOR J.A. *see* NEAL R.I. & TAYLOR J.A. High intensity peripheral nerve stimulation evokes adrenergic and opioidergic suppression of a spinal reflex in the decerebrated rabbit. (C) 18*P*

TAYLOR J.S. *see* CLARKE R.W., FORD T.W., PETTIT Jennifer S. & TAYLOR J.S. Stimuli which evoke naloxone-reversible suppression of a spinal reflex in the rabbit. (C) 20*P*

TAYLOR P.M. *see* AHMED A., RENNIE M.J. & TAYLOR P.M. Glutamine transport in sarcolemmal vesicles from rat hindlimb muscle. (C) 72*P*

THACH B.T. *see* DAVIES Alison M., KOENIG J.S. & THACH B.T. Studies of prolonged apnoea elicited by fluid-sensitive receptors in the upper airway of human infants. (C) 35*P*

THOMAS P.E. *see* RANATUNGA K.W. & THOMAS P.E. Contraction characteristics of peroneus longus muscle in the anaesthetized rat. (C) 48*P*

THOMPSON P.D. *see* DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

THOMPSON P.D. *see* COLEBATCH J.G., DAY B.L., MARSDEN C.D., ROTHWELL J.C. & THOMPSON P.D. Cortical projections to proximal arm muscles in man. (C) 9*P*

THOMPSON S.W.N. *see* KING A.E., THOMPSON S.W.N. & WOOLF C.J. Activation of ventral horn neurones by peripheral nerve and skin stimulation in the rat isolated spinal cord–hindlimb preparation. (C) 25*P*

TODD A. Cells in lamina IV of rat dorsal horn receive monosynaptic primary afferent input in lamina II. (PC) 74*P*

TOLLEY N.S. *see* ECCLES R., LANCASHIRE Barbara & TOLLEY N.S. The effect of L-menthol on electromyographic activity of the alae nasi muscle in man. (C) 34*P*

TORGAN C. *see* JONES D.A., NEWHAM D.J. & TORGAN C. Mechanical influences on long-lasting human muscle fatigue and delayed-onset pain. 415

TYLER A.W. *see* BAGUST J., KERKUT G.A. & TYLER A.W. Effects of changes in chloride ion concentration upon the rate of spontaneous dorsal root activity in isolated hamster spinal cord. (PC) 75*P*

VYSKOČIL F. *see* GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

WALKER Adrian M. *see* BERGER Philip J., HORNE Rosemary S.C. & WALKER Adrian M. Cardio-respiratory responses to cool ambient temperature differ with sleep state in neonatal lambs. 351

WALKER R.J. *see* HOLDEN-DYE L. & WALKER R.J. The effect of nitrate ions on the GABA response in *Ascaris suum* muscle cells. (C) 30*P*

WALLACE K.R. *see* LOGAN I.G., ORCHARDSON R. & WALLACE K.R. Software for real-time experiments in physiology using BBC B+ microcomputers and Unilab interfaces. (D) 4*P*

WALLIS D.I. *see* CONNELL L.A. & WALLIS D.I. The receptor mediating the depolarizing effect of 5-hydroxytryptamine in the isolated spinal cord of the neonate rat. (C) 27*P*

WARD S.A. The influence of peripheral and central chemoreflex activation on the rating of respiratory sensation in exercising humans. (C) 40*P*

WARD S.A. *see* LAMARRA N. & WARD S.A. Relationship between dead space and tidal volume during muscular exercise in humans. (C) 41*P*

WASSERMAN K. *see* HUSZCZUK A., INNES J.A., SOLARTE I., WASSERMAN K., WHIPP B.J. & YEH E. Baroreceptor contributions to ventilatory control following altered hind-limb perfusion during recovery from electrically induced exercise in anaesthetized dogs. (C) 58*P*

WATSON M.A. *see* HILTON P.J., POSTON L. & WATSON M.A. Na/H exchange in quiescent human leucocytes. (C) 67*P*

WEBB D.J. *see* BENJAMIN N., COCKCROFT J.R., COLLIER J.G., DOLLERY C.T., RITTER J.M. & WEBB D.J. Local inhibition of converting enzyme and vascular responses to angiotensin and bradykinin in the human forearm. 543

WESTERBLAD H. *see* LÄNNERGREN J., LARSSON L. & WESTERBLAD H. A novel type of delayed tension reduction observed in rat motor units after intense activity. 267

WHIPP B.J. Physiological correlates of the parameters of the power–duration curve for exhausting cycle ergometry in humans. (C) 44*P*

WHIPP B.J. *see* HUSZCZUK A., INNES J.A., SOLARTE I., WASSERMAN K., WHIPP B.J. & YEH E. Baroreceptor contributions to ventilatory control following altered hind-limb perfusion during recovery from electrically induced exercise in anaesthetized dogs. (C) 58*P*

WIGHAM Chris *see* HODSON Stuart & WIGHAM Chris A near-zero membrane potential in transporting corneal endothelial cells of rabbit. 365

WIGHAM Chris *see* ARMSTRONG Ian, HODSON Stuart & WIGHAM Chris Observations on isolated rabbit retinal pigment epithelium. (C) 69*P*

WILKES M. *see* BERMAN N.E., GRANT S., SHIPP S.D., WILKES M. & WILSON R.I. Compensation for early strabismus in the lateral suprasylvian (LS) area of the cat visual cortex. (C) 22*P*

WILLATT D.J. *see* CAMPBELL I.T. & WILLATT D.J. Ventilatory characteristics of nose and mouth breathing in man. (C) 33*P*

WILLIAMS B.C. *see* ABU-KISHK R.A., LUSH D.J., NOBLE A.R. & WILLIAMS B.C. Cyclic GMP as a second messenger for renin secretion: evidence from superfused dispersed rat kidney cortex cells. (C) 66*P*

WILLIAMS D.A. *see* BAKKER A.J., HEAD S.I., STEPHENSON D.G. & WILLIAMS D.A. Calcium levels in isolated skeletal muscle fibres from phenotypically normal and dystrophic mice (129/ReJ +/?. dy/dy). (C) 51*P*

WILLIAMS R.G. *see* RAND Victoria & WILLIAMS R.G. Neurones in the brain stem of the grey short-tailed opossum *Monodelphis domestica* revealed by antibodies to tyrosine hydroxylase. (PC) 77*P*

WILLIS W.D. *see* CHUNG J.M., LAMOTTE R.H., OH U,, OWENS C., SIMONE D., SORKIN L.S. & WILLIS W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. (C) 13*P*

WILSON R.I. *see* BERMAN N.E., GRANT S., SHIPP S.D., WILKES M. & WILSON R.I. Compensation for early strabismus in the lateral suprasylvian (LS) area of the cat visual cortex. (C) 22*P*

WINLOW W. *see* SYED N.I. & WINLOW W. Evidence for a multiganglionic neuronal substrate underlying several behaviours in *Lymnaea stagnalis* (L.). (C) 61*P*

WITHINGTON-WRAY D.J. *see* KEATING M.J. & WITHINGTON-WRAY D.J. The role of visual experience in the development of the map of auditory space in the superior colliculus of the guinea-pig. (C) 45*P*

WOLF H. *see* RONACHER B. & WOLF H. Lesion experiments indicate a hemisegmental organization of the locus flight oscillator. (C) 59*P*

WOOLF C.J. *see* KING A.E., THOMPSON S.W.N. & WOOLF C.J. Activation of ventral horn neurones by peripheral nerve and skin stimulation in the rat isolated spinal cord–hindlimb preparation. (C) 25*P*

WORLEY Jennings F. *see* NELSON Mark T. & WORLEY Jennings F. Dihydropyridine inhibition of single calcium channels and contraction in rabbit mesenteric artery depends on voltage. 65

YEH E. *see* HUSZCZUK A., INNES J.A., SOLARTE I., WASSERMAN K., WHIPP B.J. & YEH E. Baroreceptor contributions to ventilatory control following altered hind-limb perfusion during recovery from electrically induced exercise in anaesthetized dogs. (C) 58*P*

ZAIDI Mone *see* EMSON Piers C. & ZAIDI Mone Further evidence for the origin of circulating calcitonin gene-related peptide in the rat. 297

ZHUO J. *see* HARRIS P.J., SKINNER S.L. & ZHUO J. Haemodynamic and renal tubular responses to low-dose infusion or bolus injection of the peptide ANF in anaesthetized rats. 309

ZUCKER H. *see* GUTNICK M.J., LUX H.D., SWANDULLA D. & ZUCKER H. Voltage-dependent and calcium-dependent inactivation of calcium channel current in identified snail neurones. 197

CONTENTS OF VOLUME 412

May 1989

CHAMBERLAIN S. & LEWIS D.M. Contractile characteristics and innervation ratio of rat soleus motor units. 1

BABA Kenji, BARON Carl B. & COBURN Ronald F. Phorbol ester effects on coupling mechanisms during cholinergic contraction of swine tracheal smooth muscle. 23

HARRISON P.J., JACK J.J.B. & KULLMANN D.M. Monosynaptic EPSPs in cat lumbosacral motoneurones from group Ia afferents and fibres descending in the spinal cord. 43

NELSON Mark T. & WORLEY Jennings F. Dihydropyridine inhibition of single calcium channels and contraction in rabbit mesenteric artery depends on voltage. 65

BLAXTER T.J., CARLEN P.L. & NIESEN C. Pharmacological and anatomical separation of calcium currents in rat dentate granule neurones *in vitro*. 93

GINIATULLIN R.A., KHAMITOV G., KHAZIPOV R., MAGAZANIK L.G., NIKOLSKY E.E., SNETKOV V.A. & VYSKOČIL F. Development of desensitization during repetitive end-plate activity and single end-plate currents in frog muscle. 113

DEFEO Tia T. & MORGAN Kathleen G. Calcium–force coupling mechanisms during vasodilator-induced relaxation of ferret aorta. 123

DUPUIS Gilles, HÉROUX Josée & PAYET Marcel D. Characterization of Ca^{2+} and K^+ currents in the human Jurkat T cell line: effects of phytohaemagglutinin. 135

GODT Robert E. & NOSEK Thomas M. Changes in intracellular milieu with fatigue or hypoxia depress contraction of skinned rabbit skeletal and cardiac muscle. 155

AKAIKE N., KOSTYUK P.G. & OSIPCHUK Y.V. Dihydropyridine-sensitive low-threshold calcium channels in isolated rat hypothalamic neurones. 181

GUTNICK M.J., LUX H.D., SWANDULLA D. & ZUCKER H. Voltage-dependent and calcium-dependent inactivation of calcium channel current in identified snail neurones. 197

AKAIKE Norio & SADOSHIMA Jun-ichi Caffeine affects four different ionic currents in the bull-frog sympathetic neurone. 221

CERVERO Fernando & SANN Holger Mechanically evoked responses of afferent fibres innervating the guinea-pig's ureter: an *in vitro* study. 245

LÄNNERGREN J., LARSSON L. & WESTERBLAD H. A novel type of delayed tension reduction observed in rat motor units after intense activity. 267

KULLMANN D.M., MARTIN R.L. & REDMAN S.J. Reduction by general anaesthetics of group Ia excitatory postsynaptic potentials and currents in the cat spinal cord. 277

EMSON Piers C. & ZAIDI Mone Further evidence for the origin of circulating calcitonin gene-related peptide in the rat. 297

HARRIS P.J., SKINNER S.L. & ZHUO J. Haemodynamic and renal tubular responses to low-dose infusion or bolus injection of the peptide ANF in anaesthetized rats. 309

CHIOCCHIA Gilles & MOTAIS René Effect of catecholamines on deformability of red cells from trout: relative roles of cyclic AMP and cell volume. 321

LOIRAND G., MIRONNEAU C., MIRONNEAU J. & PACAUD P. Two types of calcium currents in single smooth muscle cells from rat portal vein. 333

BERGER Philip J., HORNE Rosemary S.C. & WALKER Adrian M. Cardio-respiratory responses to cool ambient temperature differ with sleep state in neonatal lambs. 351

HODSON Stuart & WIGHAM Chris A near-zero membrane potential in transporting corneal endothelial cells of rabbit. 365

LANG R.J. Identification of the major membrane currents in freshly dispersed single smooth muscle cells of guinea-pig ureter. 375

BEECH D.J. & BOLTON T.B. A voltage-dependent outward current with fast kinetics in single smooth muscle cells isolated from rabbit portal vein. 397

JONES D.A., NEWHAM D.J. & TORGAN C. Mechanical influences on long-lasting human muscle fatigue and delayed-onset pain. 415

MARSHALL Janice M. & METCALFE J.D. Analysis of factors that contribute to cardiovascular changes induced in the cat by graded levels of systemic hypoxia. 429

DAY B.L., DRESSLER D., MAERTENS DE NOORDHOUT A., MARSDEN C.D., NAKASHIMA K., ROTHWELL J.C. & THOMPSON P.D. Electric and magnetic stimulation of human motor cortex: surface EMG and single motor unit responses. 449

ALKADHI Karim A. Giant miniature end-plate potentials at the untreated and emetine-treated frog neuromuscular junction. 475

BELLUZZI O. & SACCHI O. Calcium currents in the normal adult rat sympathetic neurone. 493

DEISZ R.A. & PRINCE D.A. Frequency-dependent depression of inhibition in guinea-pig neocortex *in vitro* by $GABA_B$ receptor feed-back on GABA release. 513

BENJAMIN N., COCKCROFT J.R., COLLIER J.G., DOLLERY C.T., RITTER J.M. & WEBB D.J. Local inhibition of converting enzyme and vascular responses to angiotensin and bradykinin in the human forearm. 543

PROCEEDINGS OF THE PHYSIOLOGICAL SOCIETY

16–17 *December* 1989

Cardiff Meeting

DEMONSTRATIONS

Schaafsma A. Changes in excitability demonstrated by electrical stimulation of the motor cortex in man. 2*P*

Eccles R., Jawad M.S.M. & Morris Sara Objective and subjective measurement of nasal resistance to airflow in man. 3*P*

Logan I.G., Orchardson R. & Wallace K.R. Software for real-time experiments in physiology using BBC B+ microcomputers and Unilab interfaces. 4*P*

Jamison J.P. & Smith W.B. Opto-coupled isolated stimulator and tranformer-coupled isolated amplifier suitable for microcomputer controlled stimulation and recording from human subjects. 5*P*

Harris L.R. & Stelling J.W. A six-dimensional computer-controlled system for simultaneous vestibular and full-field visual stimulation. 6*P*

COMMUNICATIONS

Amassian V.E., Cracco R.Q., Maccabee P.J. & Marsh R. Comparing magnetic fields when stimulating human brain with different coils. 7*P*

Boniface S.J. & Mills K.R. Short latency inhibition of human spinal motoneurones by magnetic brain stimulation. 8*P*

Colebatch J.G., Day B.L., Marsden C.D., Rothwell J.C. & Thompson P.D. Cortical projections to proximal arm muscles in man. 9*P*

Clarke K.A. & Steadman P. The effect of a TRH analogue on characteristics of locomotion in the rat. 10*P*

Appenteng K. & Moore J.A. Possible inhomogeneities in the membrane resistivity of jaw-elevator motoneurones in the anaesthetized rat. 11*P*

Gladden Margaret H., Spike Rosemary C. & Sutherland Fiona I. Immaturity of fusimotor innervation at birth in the cat. 12*P*

Chung J.M., LaMotte R.H., Oh U., Owens C., Simone D., Sorkin L.S. & Willis W.D. Spinothalamic neurones and hyperalgesia; evidence from anaesthetized macaques. 13*P*

Lovick T.A. Hypotensive action of 5-HT in the ventrolateral medulla of anaesthetized rat. 14*P*

Jones H.C. & Keep R.F. Developmental changes in the ultrastructure of rat cerebral capillaries. 15*P*

Dickenson A.H., Haley J.E. & Schachter M. Evidence for bradykinin as a peripheral mediator of chemical nociception in the anaesthetized rat. 16*P*

Harrison N.L. & Lambert N.A. The effects of protein kinase activators on $GABA_A$ receptor function in cultured rat hippocampal neurones. 17*P*

Neal R.I. & Taylor J.A. High intensity peripheral nerve stimulation evokes adrenergic and opioidergic suppression of a spinal reflex in the decerebrated rabbit. 18*P*

Rees H. & Roberts M.H.T. Dorsal column inhibition of multireceptive dorsal horn neurones in the anaesthetized rat. 19*P*

Clarke R.W., Ford T.W., Pettit Jennifer S. & Taylor J.S. Stimuli which evoke naloxone-reversible suppression of a spinal reflex in the rabbit. 20*P*

Foster G.A., Rees H., Roberts M.H.T. & Sizer A.R. Microinjection of tetracaine into the anterior pretectal nucleus blocks the antinociceptive effects of deep mesencephalic stimulation in the anaesthetized rat. 21*P*

Berman N.E., Grant S., Shipp S.D., Wilkes M. & Wilson R.I. Compensation for early strabismus in the lateral suprasylvian (LS) area of the cat visual cortex. 22*P*

Brent P.J. & Ruddock K.H. Post-receptoral visual signals in man. 23*P*

Lumb B.M. Effects of electrical and chemical stimulation of ventromedial forebrain structures on a viscerosomatic reflex in the anaesthetized rat. 24*P*

King A.E., Thompson S.W.N. & Woolf C.J. Activation of ventral horn neurones by peripheral nerve and skin stimulation in the rat isolated spinal cord–hindlimb preparation. 25*P*

Lewin Gary R. & McMahon Stephen B. Is the adaptation rate of a mechanosensitive primary afferent dependent on the end-organ it innervates in the anaesthetized rat? 26P

Connell L.A. & Wallis D.I. The receptor mediating the depolarizing effect of 5-hydroxytryptamine in the isolated spinal cord of the neonate rat. 27P

Collingridge G.L. & Davies S.N. Potentiation of a 6-cyano-7-nitroquinoxaline-2,3-dione (CNQX)-insensitive EPSP in rat hippocampus *in vitro*. 28P

Evans R.H. & Long S.K. Excitatory amino acid receptors involved in primary afferent depolarization in the rat spinal cord *in vitro*. 29P

Holden-Dye L. & Walker R.J. The effect of nitrate ions on the GABA response in *Ascaris suum* muscle cells. 30P

Dakin S.R.G., Hankins M.W. & Ruddock K.H. Dual electrophysiological action of homocysteic acid on horizontal cells of the isolated retina of the roach. 31P

Brenneman D.E., Eiden L.E. & Foster G.A. Drug-induced changes in the expression of neuropeptides in primary neuronal cultures of mouse spinal cord and dorsal root ganglion. 32P

Campbell I.T. & Willatt D.J. Ventilatory characteristics of nose and mouth breathing in man. 33P

Eccles R., Lancashire Barbara & Tolley N.S. The effect of L-menthol on electromyographic activity of the alae nasi muscle in man. 34P

Davies Alison M., Koenig J.S. & Thach B.T. Studies of prolonged apnoea elicited by fluid-sensitive receptors in the upper airway of human infants. 35P

Anand Ashima, Paintal A.S., Raj H. & Singh V.K. A method for estimating changes in pulmonary capillary permeability in animals and man from the responses of J receptors to drugs. 36P

Imms F.J. & Mehta D. Concordance of cardiovascular and ventilatory response to static work in man. 37P

Gardner W.N. & Meah M.S. Response of the upper airway to CO_2 in laryngectomized man. 38P

McConnell A.K. & Semple E.S.G. Ventilatory sensitivity to CO_2 at rest and during exercise in endurance-trained and non-endurance-trained humans. 39P

Ward S.A. The influence of peripheral and central chemoreflex activation on the rating of respiratory sensation in exercising humans. 40P

Lamarra N. & Ward S.A. Relationship between dead space and tidal volume during muscular exercise in humans. 41P

Keatinge W.R. & Nyboer J.H. Body temperatue during a 125-minute swim in Bering Straits in water at 7·2–7·4 °C. 42P

Cooke C.B. The effects of vertical loading on the oxygen intake of children and adults during treadmill running. 43P

Whipp B.J. Physiological correlates of the parameters of the power–duration curve for exhausting cycle ergometry in humans. 44P

Keating M.J. & Withington-Wray D.J. The role of visual experience in the development of the map of auditory space in the superior colliculus of the guinea-pig. 45P

Ashmore J.F. Effect of salicylate on a rapid charge movement in outer hair cells isolated from the guinea-pig cochlea. 46P

Harris L.R. & Stelling J.W. Directional responses to otolithic stimulation of type I horizontal canal-related neurones in the vestibular nucleus of the awake cat. 47P

Ranatunga K.W. & Thomas P.E. Contraction characteristics of peroneus longus muscle in the anaesthetized rat. 48P

Al-Amood W.S. & Lewis D.M. Effects of electrical stimulation on degenerating rat skeletal muscle. 49P

Bruton J.D. The effects of chloride replacement on hypertonic contractures in isolated rat soleus muscle. 50P

Bakker A.J., Head S.I., Stephenson D.G. & Williams D.A. Calcium levels in isolated skeletal muscle fibres from phenotypically normal and dystrophic mice (129/ReJ +/?, dy/dy). 51P

Chapman R.A., Jones Anna E. & Rodrigo Glenn C. Damage to the cell membrane during the calcium paradox can be separated from the development of sustained irreversible contraction in isolated guinea-pig ventricular myocytes. 52P

Rodrigo Glenn C. & Suleiman M.S. The effects of harmaline on the membrane currents of single guinea-pig ventricular myocytes. 53P

Babij Philip & Periasamy Muthu Molecular cloning analysis of myosin heavy chains from rat aortic smooth muscle. 54P

Clark A.H. & Garland C.J. Evidence that protein kinase-C is involved in 5-hydroxytryptamine-induced contraction of the rabbit isolated de-endothelialized basilar artery. 55*P*

McKirdy H.C., Marshall R.W. & Taylor B.A. *In vitro* studies on the innervation of human gall-bladder muscle. 56*P*

Bond G., Dakin T.A. & Rees S. Assessment of reaction time and the menstrual cycle in women. 57*P*

Huszczuk A., Innes J.A., Solarte I., Wasserman K., Whipp B.J. & Yeh E. Baroreceptor contributions to ventilatory control following altered hind-limb perfusion during recovery from electrically induced exercise in anaesthetized dogs. 58*P*

Ronacher B. & Wolf H. Lesion experiments indicate a hemisegmental organization of the locus flight oscillator. 59*P*

Moulins M. & Simmers J. Changes in the oscillatory properties of neurones in isolated lobster ganglia after long-term decentralization. 60*P*

Syed N.I. & Winlow W. Evidence for a multiganglionic neuronal substrate underlying several behaviours in *Lymnaea stagnalis* (L.). 61*P*

DiCaprio R.A. Non-spiking local interneurones of the ventilatory system in isolated thoracic ganglia of the shore crab. 62*P*

Randall D.J. & Taylor E.W. Circulating catecholamines and the control of ventilation in the decerebrate dogfish. 63*P*

Cottrell G.A., Lin J.W., Llinás R. & Sugimori M. The molluscan neuropeptide FLRFamide potentiates transmission at the isolated squid giant synapse. 64*P*

Soffe S.R. A single sensory pathway can activate two motor patterns in *Xenopus* embryos. 65*P*

Abu-Kishk R.A., Lush D.J., Noble A.R. & Williams B.C. Cyclic GMP as a second messenger for renin secretion: evidence from superfused dispersed rat kidney cortex cells. 66*P*

Hilton P.J., Poston L. & Watson M.A. Na/H exchange in quiescent human leucocytes. 67*P*

Pocock G. & Richards C.D. Hydrogen ion regulation in rat cerebellar granule cells maintained in tissue culture. 68*P*

Armstrong Ian, Hodson Stuart & Wigham Chris Observations on isolated rabbit retinal pigment epithelium. 69*P*

Benz E.J. Jr., Gilmore-Hebert Maureen, Hoffman J.F. & Richards D.E. Expression of a ouabain-resistant Na,K-pump of HeLa cells transfected with cDNAs encoding the α_1 and β subunits of the rat brain Na,K-ATPase. 70*P*

Hundal H.S. & Rennie M.J. Comparisons between uptake of glutamine and 6-diazo-5-oxo-L-norleucine (DON) in the isolated perfused rat skeletal muscle. 71*P*

Ahmed A., Rennie M.J. & Taylor P.M. Glutamine transport in sarcolemmal vesicles from rat hindlimb muscle. 72*P*

POSTER COMMUNICATIONS

Tattersall J.E.H. Ecothiopate, an organophosphorus anticholinesterase, blocks open nicotinic ion channels in dissociated adult mouse muscle fibres. 73*P*

Todd A. Cells in lamina IV of rat dorsal horn receive monosynaptic primary afferent input in lamina II. 74*P*

Bagust J., Kerkut G.A. & Tyler A.W. Effects of changes in chloride ion concentration upon the rate of spontaneous dorsal root activity in isolated hamster spinal cord. 75*P*

Sillar Keith T. & Soffe Stephen R. Locomotion based on rhythmic motor bursts in *Rana temporaria* embryos. 76*P*

Rand Victoria & Williams R.G. Neurones in the brain stem of the grey short-tailed opossum *Monodelphis domestica* revealed by antibodies to tyrosine hydroxylase. 77*P*